



Reborn Sabreliner

The airplane pictured, known as the Raisbeck Mark Five Sabreliner 60A, is a modernized, higher performance version of the Sabreliner business jet originally designed more than 20 years ago. Aeronautical research has advanced tremendously since the Sabreliner's debut, so the airplane suffered competitively with newer business jets. The Sabreliner manufacturer—Rockwell International, El Segundo, California—decided to update the design to incorporate the latest technology, thereby insuring continuing production of a competitive new airplane and protecting Sabreliner owners' investments by allowing them to convert to the updated configuration.

Rockwell entered into an agreement with The Raisbeck Group, Seattle, Washington, a research/engineering/manufacturing firm which specializes in applying modern technology to earlier-built business and commercial jet aircraft. In the process of redesigning the Sabreliner, The Raisbeck Group employed NASA technology.

Redesign of the airplane involved extensive changes in aerodynamics, structure and on-board systems. Key to the Mark Five design is a new wing, which has greater fuel capacity, increased span and improved airfoils to reduce fuel consumption.

Ames Research Center cooperated with The Raisbeck Group in designing the wing, assisting in applying the Ames-developed technique known as CFD—for Computational Fluid Dynamics—a computerized method of simulating and analyzing the three-dimensional flow of air over an airfoil.

By programming wing design data into a computer, Raisbeck engineers were able to determine the wing's reaction to various conditions of flight and refine the design until optimum results were obtained. Use of CFD saved Raisbeck an estimated 4-1/2 months of flight testing and associated costs.

The Mark Five design that emerged offers, among a number of improvements, about 25 percent longer range along with higher cruise speed and reduced takeoff/landing distance requirement. The Raisbeck Group is converting existing Sabreliners to Mark Five configuration at its facilities on Boeing Field, Seattle, Washington; Sabreliner owners can get the Mark Five for less than one-fourth the cost of an equivalent-performance new airplane. Raisbeck also sells Mark Five system components to Rockwell's Sabreliner Division, St. Louis, Missouri; these components form the aerodynamic and structural basis for the latter company's new fanjet Sabreliner Model 65.